

บทคัดย่อ

การนำเทคโนโลยีสมัยใหม่มาใช้และการสืบค้นข้อสนเทศระหว่างประเทศในการบริการข้อมูลของห้องสมุด

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บทความนี้มุ่งเสนอภาพรวมของวิธีการประยุกต์เทคโนโลยีสมัยใหม่มาใช้ในงานของห้องสมุดมหาวิทยาลัยในประเทศไทย การนำเทคโนโลยีที่ก้าวหน้ามาปรับใช้ในงานห้องสมุดได้รับการกระตุ้นโดยการตื่นตัวของระบบข้อสนเทศในปัจจุบัน ตลอดจนโดยความต้องการของห้องสมุดที่จะสนองความต้องการผู้ใช้บริการ การประยุกต์ใช้นี้ได้รับความสนับสนุนจากทุกฝ่ายที่เกี่ยวข้อง ไม่ว่าจะเป็นรัฐบาล ทบวงมหาวิทยาลัยของรัฐ ตลอดจน องค์การระหว่างประเทศ สถาบันวิทยบริการ จุฬาลงกรณ์มหาวิทยาลัย เป็นผู้ริเริ่มในการเก็บรวบรวม สืบค้น ตลอดจน เผยแพร่ข้อสนเทศโดยระบบคอมพิวเตอร์ สถาบันฯ ได้จัดอบรมบุคลากร รวมทั้งสนับสนุนห้องสมุดของสถาบันอุดมศึกษาอื่น ๆ เพื่อเป็นการเตรียมการและมีส่วนร่วมในทรัพยากรข้อมูลของกันและกัน รวมตลอดถึงการประยุกต์เทคโนโลยีที่ก้าวหน้าในงานห้องสมุดโดยผ่านการฝึกอบรมและปฏิบัติการ

จุฬาลงกรณ์มหาวิทยาลัย

Modern Technology Application and Remote Data Information Retrieval in Library Information Services*

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The significance of modern technology applications in library information service

Ever since World War II, great quantity of information in the forms of books and other printed matters which cover most subjects, has been so produced that librarians find it difficult to satisfactorily supply their library-users with all the information they need. This printed information is, to a great extent, indispensable to all students, academics, and researchers for their in-depth studies into various fields of knowledge. Hence, it is a big problem for both big and small libraries to supply their readers with sufficient information sources that are up-to-date and cover a wide range of varieties. To solve this problem, a new idea of the installing and sharing of information has been conceived.

Along side with this explosion of information, advanced technology has brought about such modern communications as telex, computer, satellites, and so forth. These modern telecommunications have led people to a desire to acquire even more rapid information. Libraries, of course, have to respond to this need and have to bring in new technology so that their users may have an easy and rapid access to as much information as possible.

Computer and communications have been continuously developed and they have also gradually become one and the same. For example, up till now computers's size has been reduced starting from being bulky to mini and, at present, micro computers are commonplace. In the near future, information including voice and images will be sent on line to receivers who are at distant places. This type of information transferring has been realised in the form of telefax or videotex. With the help of advanced technology, information will be able to flow easily and in great quantity, and it can be modified for house-use within seconds. At present, computer hardware and software are less and less expensive and *integrated circuit* has been successfully developed. Although its size is tiny, the integrated circuit's capability is quite enormous. It is expected that its costs will be less expensive as time goes by.

As discovered in my readings, in the near future information will be channelled through "*an optical disc*". The invention has been successful so far, however, it still requires quite a large space and a great amount of money to install one. But I strongly believe that it would not be too long to wait before an "optical disc" has become one of the house-use products which most house holders can purchase.

One optical disc or two may be comfortably filled with all information available in the Library of Congress, the United States of America, As for the costs, when there are more consumers, optical disc can be inexpensive. It seems to suggest that a nuclear war is not as

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frightening as an economic war. It is because the countries which have more information will be better off. This conclusion derives from the assumption that sufficient information can predict the ups and downs of the world's economy. Such countries as the United States of America and Japan whose information is reliable, sufficient and complete win an advantage over other countries whose information is unreliable, insufficient and incomplete.

At present, computer has a leading role in the system of information and the services the libraries offer. The computerisation of information has facilitated a rapid storage of information and a quick up-dating and retrieving of information. Besides, the management of data-base information for the purpose of producing various kinds of printed matters can be easily done.

The dissemination and presentation of information can be perceived in various forms. The most convenient form is that of the printed matters. Libraries as well as the documentation centers have a large collection of such printed matters as books, documents and leaflets. Another form of information installed in libraries and centres of documents is that of audio visual tools. Such tools include slides, tapes, video-cassettes and films. They also do the job of disseminating information.

In addition to this, the reprographic services are another form of information dissemination. When a printed piece of information is needed, it can be reproduced for the user in the forms of photo copies, or micro films or micro fitch.

Planning of modern technology application

Thailand has long realised the importance of libraries and information dissemination. This has been characterized by the establishment of the Sub-committee for Libraries Development in Higher Education Institutions. The members of this Sub-Committee have been appointed by the Ministry of University Affairs, and their main concerns are to work out plans and issue measures for the development of libraries in universities and other higher education institutions. The immediate objectives are to up-date information resources in all the libraries and raise their standard to meet that set forth by the Ministry's policy. This Sub-Committee has so far considered the following issues:

1. raising the standard of university libraries to the level which is currently deemed appropriate for Thai higher education institutions.

2. considering ways of sharing information resources available in various Thai higher education institutions. When implemented, this will help save the national budget and human resources. The considerations have been focusing on the following:

- 2.1 The Project of Union List of Serials in Thailand: Automated.

- 2.2 Union Catalog of Books in Thailand: Automated.

The two projects, abovementioned, have received full cooperation from most Thai university libraries.

3. Organising a workshop on AACR-2

4. Organising a seminar to stimulate a closer co-operation amongst university libraries, on "How Technology Can Be Used to Facilitate the Development of Higher Education Libraries."

5. Searching for Thai technical terms that may be used appropriately in the field of Library and Information Science, And prescribing the terms in relation to library and Information Science that are to be used in academic discussions.

In addition to the five items described above, the Sub-Committee has already initiated two big projects which are to be carried out in the near future and which will create an even closer cooperation in terms of sharing information resources available in the libraries. These two projects are:

1. The project to establish the National Serials Centre. This project will help create a centre in which the information concerning all periodicals can be kept and retrieved when needed. For example, the centre will be responsible for making lists of names of all periodicals, making periodicals' indexes, producing articles and installing all (if possible) periodicals available in the market. The services of this centre will be mainly extended to the higher education libraries which are members.

2. The project to establish a data base within the higher education libraries which are members for on-line information network. This project will make use of advanced technology in facilitating a rapid and easy flow of information.

As for computerisation in university libraries, it has been noticed that different libraries have adopted a different type of computer and a different system of services. These differences cause many problems when information needs to be shared and when cooperation needs to be created before an easy access to all information resources can be made. The Sub-Committee has realised these difficulties and has now studied the advantages and disadvantages of different computer systems currently available in university libraries. The Sub-Committee has set up guidelines and has suggested the form of computer that may appropriately serve the library work. This uniformity will help cut unnecessary expenses and personnel, and it may facilitate full co-operation amongst universities when information needs to be either exchanged or shared. This uniformity will also enable Thai university libraries to match their system with that of the world. By this, it means information can be easily exchanged or shared internationally.

The conclusions made by the Sub-Committee are as follows:

1. The scope of computerisation covers the following types of work.

- a) work in relation to periodicals
- b) acquisition work
- c) cataloging work
- d) circulation services
- e) reference services

Computerisation has been greatly adopted in a), however, b), c), d), and e) are at the experimental stages.

2. Problems stemming from the computerisation in the library and possible ways to deal with them. From initial studies, it has been found that

1. Computerisation in the library will successfully reach the objective set forth if it is strongly supported by the Ministry of University Affairs, in particular, in terms of financial support,

2. Qualified personnel are needed. The problem may lie in the facts that the personnel must be highly responsible for their continuous work and its standard must be maintained throughout, and that the personnel must have the knowledge of library and information science, and of a programmer. At present, there are no librarians who are also programmers, or programmers who can do the librarian's job. The Sub-Committee has suggested ways to solve the above mentioned problems as follows:

2.1 Financial Problem. Financial aid must be sought from the government as well as the private sector and international agencies.

2.2 Personnel Problem. Personnel who are programmers must be encouraged to attend library training, or, like wise personnel who are librarians must be encouraged to attend computer training. The training may be conducted at two levels. Initially, personnel may be sent to attend a short-course training both in-side or out-side the country. Finally, library science courses organised in the university, leading to degree level, must incorporate computer courses.

3. Computer application in library work. It has been found that different systems of computer are used in various libraries. The differences include the computer hardware--the individual components and software--the computer language used, and the scope in which computer may be used in the library. The Sub-committee has made some suggestions as to how computer can be used in library work and as to which format will technically benefit most libraries that possess different types of computer, in terms of information exchanging and sharing.

4. Steps of implementation. The Sub-Committee has deemed appropriate that the improvement and encouragement of computerisation in library work should proceed according to the following :

1. The first and foremost thing is to specify the procedures and main characteristics of the files for particular computer work.
2. Next is to specify the design and layout of worksheet, record format, and other audio-visual devices for each computer work.
3. Thirdly, concentration should be placed on systems design for each work.

The UNISIST Committee of UNESCO has realised that computer is having a more and more significant role in libraries and documentation centres of Thailand. At present all kinds of information tend to increase quickly. This puts libraries in a rather awkward position to effectively provide their users. Besides, most Thai libraries lack qualified personnel who have a good knowledge and experience in using computer to install, retrieve and disseminate information. Therefore, staff development programmes are a must for all personnel of both libraries and documentation centres. They must have a thorough knowledge and experience of library computerisation, which is essential to the planning and implementing of work in each unit of the library. The staff development programmes should include the considerations of future network of the national information system.

The UNISIST Committee has appointed the Academic Resource Centre to organise a national workshop on "Computer Applications in Information Storage, Retrieval and Dissemination. The first Workshop took place on September 17 to November 11, 1984. The workshop received financial support from UNESCO. Other Workshops of the same nature will regularly take place so that all library personnel may be well trained in using computer in their library work.

Current modern technology and remote data information retrieval in Thai libraries

1. Computerisation

The use of computerised technology for library operations in Thailand at national level is quite limited due to lack of appropriate computer technology, shortage of experienced staff, and insufficient funding. However, many experimental projects have been launched by many interested institutions and are being further developed, with assistance from international organisations and institutions such as the UNESCO and the Asian Institute of Technology which has its campus in Bangkok. AIT has been a pioneer in the area of computer application from the beginning up to the present time. AIT has many advantages due to being an international institute. It is well equipped with high computer technology and also receives grants from many foreign governments and national and international organisations, such as IDARC and UNESCO. It, in turn, has helped many library institutions in Thailand in their attempts to make use of computer in their operations.

At present, the Thai Government has also realised the need for computerised technology and has recently lower tariff imposed on imported computers to promote a wider utilisation of its technology in various institutions.

As funding is still limited, resources need to be shared among national institutions, the future of library automation in Thailand is likely to adopt a partly centralised system for certain

bibliography projects such as the Union List of Serials, and the Union Catalog. For other functions such as circulation and acquisitions, it will be a totally decentralized system which will encourage a wider competition among libraries to develop their own systems.

2. Tele-communication network.

While Thailand has not yet been linked up by computer network, plans to install such communication devices as datafax or facsimile have been realised, and in fact these devices have already been in use in some areas. It is expected that in the near future most libraries and documentation centres will install these devices to help disseminate their information.

Datafax or facsimile does the job which is not much different from a photo-copying machine. But the information received by the datafax will be sent in the form of signals through the telephone line. The information to be sent by means of datafax or facsimile will have to be displayed on a piece of paper. This paper will be placed on the sender's machine. The sender dials the telephone number of his receiver and when the line is connected the machine will scan all the displayed information which can be written words, diagrams, images, pictures, etc. The signals will go through the telephone line and they will be decoded, by the receiver's datafax, back into the same form of information displayed at the sender's end. Written words, pictures or images will appear at the receiver's end exactly the same as those at the sender's end. The whole process does take only ten seconds to ten minutes at the most. This, however, depends on the efficiency of the machine as well. The receiving and sending of information by means of datafax or facsimile can be conducted any where on earth, with any person, and at any time. The only limitation is that datafax or facsimile has to rely on the telephone, connection and that at present its costs are rather high.

The fact that the world continuously develops itself causes the systems of today's tele-communications to become more and more advanced. And the results of this progress in tele-communication help reduce the average expense in sending information, and facilitate an even easier flow of information. In the future, facsimile will be a communication machine that can receive as well as pass on information through a digital telephone. This will help information to be sent even faster and easier. And in the future its function can be connected with such library communication devices as word processor and/or computer.

3. On-line searching services

Information data and knowledge are the essential factors for the development of human resources; the indispensable tools for planning, policies formulation, and administration; as well as the significant components for national development. Presently, quantity of information data augments rapidly and enormously that the development of various systems of data bases--by employing the computerisations together with the on-line remoting data bases by tele-communication network as the tools for data acquiring, retrieving and servicing--is undertaken for the benefits of the rapid information retrieval from another part of the world.

In Thailand, accessing on-line remoting data bases using tele-communication network has also been expanding. Institutions, such as the Academic Resource Center of Chulalongkorn University has been provided with leased line to connect with the TYMNET and TELENET for accessing to data bases available on such services as DIALOG, SDC, WQL etc. It is strongly felt that the librarians and information personnel in institutions having the potential for accessing remote data bases would be greatly helped and benefited through an intensive short training on on-line access. Therefore, the Academic Resource Center is planning to organise a workshop on "On-line Searching", on 25-29 November 1985.

Conclusion

Information is an issue of extreme importance, especially when it is considered in connection with the national development and security. This is because knowledge, technology, and experiences in a particular field have been expanded swiftly. Hence, the receiving of information and the disseminating of it to the public need to be accordingly accelerated and increased in terms of network, so that they can make use of it to its utmost potential. In a developing country like Thailand, it seems to be a must to urgently tackle the issues of information storage, retrieval and dissemination first. This can be initially characterised by the organisation of short-term and long-term training for library personnel. These personnel should possess a basic understanding of how a computer works and how they can use a computer and other advanced technology equipment in their library routines and information services. This includes the applications of computer in various development work and an understanding of the work of data bases inside and outside the country. A thorough understanding of the aforesaid will facilitate a better exchange of information and better services. Besides, new technology which has affected development in the network of information will also help create a better understanding and a better cooperation amongst people of the same nation and new technology will help establish the national information system. With this realisation, the government has initiated a national information system project and has suggested procedures in implementing it. It is expected that the implementation will take place soon. And with this project more new technologies will be applied; however, this does not mean that manual work will be totally abandoned.

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